UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/579,960 | 05/19/2006 | Manfred Schuele | 3631 | 1980 |

7590 07/11/2011

Striker, Striker & Stenby
103 East Neck Road
Huntington, NY 11743

| EXAMINER | |
|---|---|
| KOEHLER, CHRISTOPHER M | |
| ART UNIT | PAPER NUMBER |
| 3726 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 07/11/2011 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/579,960 | SCHUELE ET AL. | |
| | Examiner | Art Unit | |
| | CHRISTOPHER KOEHLER | 3726 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/10/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5 and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Majic (US Pat No. 4,787,136) in view of Totsu (US Pub No. 2004/0050566 A1).

Regarding **claim 1**, Majic discloses a method for producing a screw connection by means of a cutout screwdriver (10) that terminates a screw driving operation when a predetermined torque is achieved (column 1, lines 49-53), where data relating to the screw driving operation are detected (E2 actual values in figure 2) and evaluated by an evaluation circuit (35) being integrated (the evaluation circuit acts in concert with and is connected to the cutout screwdriver and therefore is integrated) in the cutout screwdriver and transmitted to an external monitoring unit (15, column 1, lines 53-61). It is noted that Majic does not specifically disclose sending a deactivation signal to the cutout screwdriver when the number of idle screw driver actuations exceeds a predetermined limit value per screw driving cycle. However, Totsu discloses sending a deactivation signal to the cutout screwdriver once a predetermined torque has been reached (paragraph [0027], lines 5-10). In other words, the deactivation signal is sent when the predetermined torque is reached such that the screwdriver actuates but no longer drives the screw and is therefore idle. Hence it would have been obvious to one

of ordinary skill in the art at the time the invention was made to use a signal in Majic that indicates when a predetermined torque has been reached, as taught by Totsu, to prevent overtightening of the screw.

Regarding **claim 2**, Majic discloses the monitoring unit (38) receives the transmitted data and evaluates them with regard to predetermined limit values, and, when the predetermined limit values are not met, then an error message is generated (column 7, lines 61-66; column 8, lines 16-21).

Regarding **claim 3**, Majic discloses evaluating the data with respect to a tolerance range (column 1, lines 57-68). It is noted that Majic does not specifically disclose the cutout screwdriver is deactivated. However, Totsu discloses the cutout screwdriver is deactivated upon exceeding a predetermined parameter value (paragraph [0004], lines 6-13). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to deactivate the screwdriver of Majic after data lies outside a desired tolerance range, as taught by Totsu, as the screwdriver would need to stop for allowing a workpiece to be removed from the production line to an adjustment station as disclosed in Majic (column 1, lines 65-68).

Regarding **claim 4**, Majic discloses a torque sensor in the cutout screwdriver detects a current torque and transmits it to the evaluation circuit (column 1, lines 45-48 and lines 57-61).

Regarding **claim 5**, Majic discloses the evaluation circuit, based on the achievement of a desired torque, determines whether a correct screw driving operation has been executed (column 1, lines 57-65; column 7, lines 61-67; column 8, lines 9-15).

Regarding **claim 9**, Majic discloses the limit values for the data transmitted from the evaluation circuit are stored in the monitoring unit (38), with which the transmitted data are compared and evaluated (column 7, lines 32-37 and lines 39-42), and when limit value criteria are not met, the monitoring unit sends the cutout screwdriver a signal (i.e. a “not good" signal; column 8, lines 16-24). It is noted that Majic does not specifically disclose that the signal causes the supply of current to the cutout screwdriver to be interrupted. However, Totsu discloses that a received signal causes the supply of current to the cutout screwdriver to be interrupted (i.e. when the limit criteria is not met for instance, when it goes over, the overload is detected and results in shutting the supply of current to the motor, thereby shutting down the screwdriver; paragraph [0004], lines 6-13). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made, in addition to using a signal that signifies a "not good" signal as disclosed in Majic, to also send a signal that interrupts the current supply to a screwdriver thereby deactivating it, as taught by Totsu, as the screwdriver would need to stop for allowing a workpiece to be removed from the production line to an adjustment station as disclosed in Majic (column 1, lines 65-68).

Regarding **claim 10**, Fig. 1 and 2 of Majic discloses that the evaluation circuit (35) is coupled to the monitoring unit (38) (column 6, lines 36-43).

Regarding **claim 11**, Majic discloses the cutout screwdriver has a transmitter/receiver system (column 4, lines 4-9). It is noted that Majic does not specifically disclose it is able to interrupt a supply of current to the cutout screwdriver. However, Totsu discloses a transmitter/receiver system that is able to interrupt a supply

of current to the cutout screwdriver in response to an overload (i.e. “not good”) signal (paragraph [0004], lines 6-13). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to interrupt a supply of current to the screwdriver of Majic, in the instance when the screw driving operation yielded a "not good" signal, as taught by Totsu, as the screwdriver would need to stop for allowing a workpiece to be removed from the production line to an adjustment station as disclosed in Majic (column 1, lines 65-68).

Regarding **claim 12**, Majic discloses the monitoring unit has a transmitter/receiver system that is able to receive data transmitted from the evaluation circuit (column 7, lines 61-67). It is noted that Majic does not specifically disclose sending a deactivation signal to the cutout screwdriver. However, Totsu discloses sending a deactivation signal to the cutout screwdriver once a predetermined torque has been reached (paragraph [0027], lines 5-10). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a signal in Majic that indicates when a predetermined torque has been reached, as taught by Totsu, to prevent overtightening of the screw.

Regarding **claim 13**, Majic discloses the monitoring unit has an evaluation unit in which the data transmitted from the evaluation circuit are stored, compared with limit values for the transmitted data, and evaluated (column 7, lines 61-67), and when limit value criteria are not met, the evaluation unit sends the cutout screwdriver a signal (i.e. a “not good" signal; column 8, lines 16-24). It is noted that Majic does not specifically disclose a control unit interrupts the supply. However, Totsu discloses a control unit to

interrupt the supply of current in the cutout screwdriver upon exceeding a predetermined parameter value (i.e. thereby deactivating the screwdriver; paragraph [0004], lines 6-13; paragraph [0027], lines 5-10; paragraph [0030], lines 8 and 9). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the signal that signifies a "not good" signal as disclosed in Majic to also send a signal that interrupts the current supply to the screwdriver thereby deactivating it, as taught by Totsu, as the screwdriver would need to stop for allowing a workpiece to be removed from the production line to an adjustment station as disclosed in Majic (column 1, lines 65-68).

Regarding **claim 14**, Majic discloses a cutout screwdriver equipped with a transmitter/receiver (12/15) unit for executing the method.

Regarding **claim 15**, Majic discloses a cutout screwdriver (10) comprising an evaluation circuit (35) being integrated in the cutout screwdriver (the evaluation circuit acts in concert with and is connected to the cutout screwdriver and therefore is integrated); and an external monitoring unit (15, 38), wherein the evaluation circuit detects and evaluates data relating to an operation of the cutout screwdriver (column 1, lines 53-61), and then transmits the evaluated data to the external monitoring unit (38, see figure 2). It is noted that Majic does not specifically disclose sending a deactivation signal to the cutout screwdriver when the number of idle screw driver actuations exceeds a predetermined limit value per screw driving cycle. However, Totsu discloses sending a deactivation signal to the cutout screwdriver once a predetermined torque has been reached (paragraph [0027], lines 5-10). In other words, the deactivation

signal is sent when the predetermined torque is reached such that the screwdriver actuates but no longer drives the screw and is therefore idle.. Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a signal in Majic that indicates when a predetermined torque has been reached, as taught by Totsu, to prevent overtightening of the screw.

3. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Majic/Totsu in view of Setton et al. (US Pub. No. 2003/0173096 A1).

Regarding **claim 6**, Fig. 2 of Majic/Totsu discloses an evaluation circuit (35). It is noted that Majic does not specifically disclose detecting the number of screw driving operations per screw driving cycle. However, Setton et al. disclose in an electronically controlled screwdriver an evaluation circuit that detects the number of screw driving operations (i.e. rotations) per screw driving cycle, the rotations being indicative of the torque applied (i.e. as the driven part is in contact with the screw, it also indicates the revolutions of the screw; paragraph [0024], line 3 and paragraph [0027], lines15-19). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to also monitor the number of revolutions of the screw of Majic to indicate if the amount of torque generated is within the preset limits, as taught by Setton et al., to provide a secondary means for monitoring the torque during the screw driving operation.

Regarding **claim 8**, Fig. 2 of Majic/Totsu discloses an evaluation circuit (35). It is noted that Majic does not specifically disclose detecting the current consumption and/or voltage drop during a screw driving operation. However, Setton et al. discloses in an

electronically controlled screwdriver an evaluation circuit that detects the current consumption and/or voltage drop during a screw driving operation (i.e. in this instance, a current consumption is detected by the current limiting device; paragraph [0031], lines 5-9). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect if there is a current consumption in Majic, as taught by Setton et al., since a greater amount of current is drawn from the motor as the torque increases, due to the relationship that (current)(voltage)= torque (2π)(rotational speed).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Majic/Totsu in view of Bitzer (US Pat. No. 4,571,696).

Regarding **claim 7**, Fig. 2 of Majic/Totsu discloses an evaluation circuit (35). It is noted that Majic does not specifically disclose detecting the duration of the screw driving procedure. However, Bitzer discloses in an electronically controlled screwdriver a circuit that detects the duration of the screw driving procedure (column 2, lines 8-10). Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to include means to measure the duration of the screw driving procedure on the evaluation circuit disclosed in Majic, as the duration of the procedure can be preset, and as disclosed in Bitzer, when the preset torque value is reached, a preset time will start counting until it is reached, and the screw driving operation (which should be complete) is then evaluated (column 1, lines 37-44; column 2, lines 8-10).

### *Response to Arguments*

5. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER KOEHLER whose telephone number is (571)272-3560. The examiner can normally be reached on Mon.-Fri. 8:30A-4:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DAVID P. BRYANT/
Supervisory Patent Examiner, Art Unit 3726

/C. K./
Examiner, Art Unit 3726